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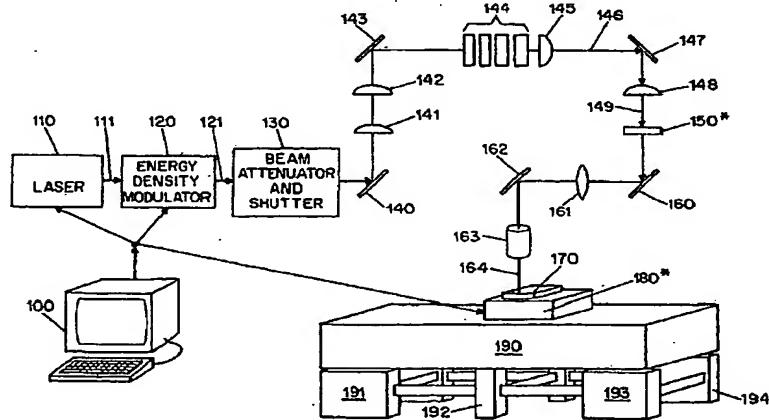
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PROCESS AND SYSTEM FOR LASER CRYSTALLIZATION PROCESSING OF FILM REGIONS ON A SUBSTRATE TO MINIMIZE EDGE AREAS, AND STRUCTURE OF SUCH FILM REGIONS



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(57) Abstract: A process and system for processing a thin film sample (170) are provided. In particular, a beam generator (110) can be controlled to emit at least one beam pulse (111). The beam pulse (111) is then masked to produce at least one masked beam pulse (164), which is used to irradiate at least one portion (510) of the thin film sample (170). With the at least one masked beam pulse (164), the portion (510) of the film sample (170) is irradiated with sufficient intensity for such portion to later crystallize. This portion (510) of the film sample (170) is allowed to crystallize so as to be composed of a first area (518) and a second area (515). Upon the crystallization thereof, the first area (518) includes a first set of grains, and the second area (515) includes a second set of grains whose at least one characteristic is different from at least one characteristic of the second set of grains. The first area (518) surrounds the second area (515), and is configured to allow an active region (618) of a thin-film transistor (TFT) (610) to be provided at a distance therefrom.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/25954

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H01L 21/20, 21/36, 29/04
US CL : 438/487,482,486,488,481,166; 257/66,69,70,75

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 438/487,482,486,488,481,166; 257/66,69,70,75

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST search terms: thin film sample, mask pattern, crystallize, grains, TFT

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4,309,225 A (FAN et al.) 05 January 1982 (05.01.1982), see entire document.	1-33
A	US 6,169,014 B1 (MCCULLOCH) 02 January 2001 (02.01.2001), see entire document.	1-33
A	US 5,591,668 A (MAEGAWA et al.) 07 January 1997 (07.01.1997), see entire document.	1-33

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

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